DOCUMENT RESUME

ED 294 879 TM 011 237

AUTHOR Costantino, Giuseppe; And Others
TITLE Cross Cultural Validation of TEMAS (Minority Version). A Pluralistic Projective Test.
SPONS AGENCY National Inst. of Mental Health (DHHS), Rockville, MD. Center for Minority Group Mental Health Program.
PUB DATE Aug 87
GRANT 1-R01-MH33711; 2-R01-MH30569-06A
NOTE 48p.; Paper presented at the Annual Meeting of the American Psychological Association (95th, New York, NY, August 30, 1987).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Cross Cultural Studies; Elementary Education; Elementary School Students; *Hispanic Americans; Minority Groups; *Personality Measures; Psychological Evaluation; *Psychometrics; *Puerto Ricans; Test Validity
IDENTIFIERS *TEMAS Thematic Apperception Test

ABSTRACT

Psychometric research was conducted on the TEMAS (meaning "themes" in Spanish) Thematic Apperception Test (TAT). Personality functioning is rated in terms of constructs such as delay of gratification, achievement motivation, reality testing, and self-concept. The TEMAS test was administered to 140 public and 140 private school students from kindergarten to grade 6 and 50 young psychiatric outpatients from San Juan, Puerto Rico. For cross-cultural comparison, means and standard deviations were determined for a sample of children of Puerto Rican background in New York and similar outpatients. Hispanic children in New York were more fluent on the TEMAS than the TAT. Internal consistency and inter-clinical reliability were established and evidence of concurrent validity was apparent in the comparison of test groups. The TEMAS test personality profile appears to be a gross discriminator of clinical and non-clinical states. (SLD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED294879

CROSS CULTURAL VALIDATION OF TEMAS (MINORITY VERSION)

A PLURALISTIC PROJECTIVE TEST

Giuseppe Costantino

Sunset Park Mental Health Center,
of Lutheran Medical Center, Brooklyn,
New York, and Hispanic Research Center,
Fordham University

Robert G. Malgady

Department of Mathematics, Science, and
Statistics, New York University, and
Hispanic Research Center, Fordham
University

Lloyd H. Rogler

Hispanic Research Center, Fordham
University

Ellen Tsui

Department of Education Psychology, New
York University, and Hispanic Research
Center, Fordham University

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

GIUSEPPE COSTANTINO

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Paper Presented at the 95th Annual Convention of the American Psychological Association, New York City, August 30, 1987.

This research was supported in part by grants (No. 1-R01-MH33711) and No. 2R01-MH30569-06A) from the National Institute of Mental Health, Center for Minority Group Mental Health Programs. The authors wish to acknowledge the cooperation of the participating Public Schools in District 15, Brooklyn, New York, and public and private schools in Puerto Rico, the Sunset Park Mental Health Center, Coney Island Hospital, Northside Center for Child Development, the Queens Children Psychiatric Center, and the University of Puerto Rico Medical Center, where this research was conducted. Requests for reprints should be sent to Dr. Giuseppe Costantino, Hispanic Research Center, Thebaud Hall, Fordham University, Bronx, New York 10458.

Abstract

The validity of conventional standardized tests for personality assessment of ethnic minority children has been widely criticized, both in the public domain and research literature in the United States. On conventional projective personality tests (e.g., TAT, CAT), Hispanic children have been evaluated as less verbally fluent than their nonminority counterparts, which impugns the validity of such techniques. This paper presents psychometric research conducted on TEMAS (meaning "themes" in Spanish), a thematic apperception test depicting ethnically pluralistic characters interacting in familiar settings. This test consists of 23 chromatic pictures posing antithetical dilemmas which the examinee must resolve in telling a story about each picture. Based upon the adaptiveness of examinees' themes, personality functioning is rated in terms of constructs such as delay of gratification, achievement motivation, reality testing, and self concept. The TEMAS test has been standardized with Hispanic children (grades K-6) in New York and Puerto Rico. Preliminary studies of the New York population indicated that Hispanic children were more verbally fluent on the TEMAS than the TAT, and that TEMAS pictures evoked stable themes over a 4-month interval. Other studies established internal consistency and inter-clinician reliability in rating TEMAS protocols. Rudimentary evidence of concurrent validity was established, as well as Reliability and validity studies

conducted in Puerto Rico are compared with studies conducted in New York. Results are discussed in terms of culturally-referenced test development and interpretation of personality functioning.

Numerous clinicians and researchers alike have argued that projective techniques provide a more comprehensive and clinically meaningful assessment of personality functioning than "paper and pencil" tests (e.g., Rapport, 1942), and also obviate attendant problems with validation of personality inventories for cross-cultural research (Padilla, 1979, 1973). Traditionally, projective tests have fared well in clinical settings, but have presented a host of problems with respect to psychometric rigor (Murstein, 1963). In recent years, however, there has been a resurgence of interest in developing clinically useful and psychometrically acceptable projective techniques (Exner, 1978; Holtzman, Thorpe, Swartz, Herron, 1961; Sobel, 1981).

A prominent issue of widespread debate in the United States is the validity of evaluating ethnic minorities with instruments that have been standardized on white, middle-class norm groups (Olmedo, 1981; Padilla, 1979). While some attempts have been made to develop minority-oriented cognitive and personality tests for blacks (Thompson, 1949; Williams, 1977; 1982), as well as Hispanics (Ortiz & Ball, 1977; Struthers & DeAvila, 1977), unfortunately such tests have not weathered critical psychometric scrutiny (Oakland 1977).

A decade ago, Padilla and Ruiz (1973) reported that

very little research had focused on the psychological assessment of Hispanics in particular with projective techniques, and neglect of this research topic persists today (Rogler et al., 1983). The use of traditional thematic apperception tests, such as the TAT and CAT, has led to the evaluation of both Hispanic and black children as less verbally fluent and more psychopathological than their nonminority counterparts (Ames & August, 1966; Booth, 1966). Yet these assessment practices are ubiquitous despite acknowledgement that the validity of projective techniques can be impugned with verbally inarticulate examinees (Anderson & Anderson, 1955). Hence there is a compelling need to develop psychological tests for reliable and valid diagnosis and personality assessment of ethnic racial and linguistic minority children (Padilla, 1979).

The problem of developing valid and reliable culturally-sensitive psychiatric evaluations and psychometric instruments is a serious one in a multicultural and pluralistic American society and is compounded when we endeavor to establish valid psychiatric diagnoses and assessment in cross-cultural settings (Good and Del Vecchio-Good, 1986; Malgady, Rogler, and Costantino, 1987).

Development of TEMAS

Based upon these considerations, the TEMAS thematic apperception test was developed with structured, familiar and culturally relevant stimuli. There are two parallel

sets of TEMAS, minority and nonminority versions (Costantino, 1986). TEMAS test, minority version, which consists of 23 chromatic pictures depicting minority characters in urban setting, embodies following features: 1) use of structured stimuli and diminished ambiguity to pull for specific, covert behaviors and internal dialogues; 2) use of chromatically attractive, ethnically relevant and contemporary stimuli to elicit diagnostically meaningful stories; 3) representation of both negative and positive intrapersonal and interpersonal functions in the form of conflicts or dilemas which require a resolution; 4) interaction of cognitive, affective, and intrapersonal functions; and 5) use of an objective scoring system in analyzing TEMAS stories, which assesses both the structure and content of the stories (Costantino, 1978).

The theoretical framework and underlying the construction of TEMAS test is based generically in the traditional egopsychological theory as represented in Bellak (1971), theoretical reconsideration of the original Thematic Apperception Test (Murray, 1943), in the dynamic Motivational Psychology proposed initially by McClelland and Atkinson (1953) and more recently articulated by Atkinson (1981), and in the cognitive and social learning theories (Bandura 1977, Piaget 1971). Accordingly, personality structure is conceived within this framework as a constellation of latent motives or ego functions which are defined as internalized dispositions that interact with environmental

stimuli to determine overt behavior in specific situations. Since these dispositions are not directly accessible to clinical inquiry, projective techniques prove to be useful tools for probing beneath the surface structure of "phenotype" of personality, thereby arousing the latent motives embedded in the personality "genotype" (1981). Access to the genotypic structure of personality is accomplished by projective test stimuli that provoke imaginative or fantasy processes in telling stories about the stimuli. Therefore, motivational theorists maintain that projective tests assess relatively stable individual differences in the strength of underlying motives, which are behaviorally expressed in thematic content, and also reveal individual differences in the antecedent developmental histories of examinees. Based upon this reasoning, Atkinson (1981) contends that the analysis of thematic content has a "more solid theoretical foundation than ever before and must...be considered the most promising and virtually untapped resource for future study of personality. Furthermore, developmental and learning theorists (Bandura, 1977; Piaget, 1962; 1971) have suggested that personality functions are acquired through modeling, and then psychologically instantiated through verbal and imaginal processes. Hence, advocates of projective techniques conclude that since personality functions are acquired within a given a sociocultural context, they are readily transferred to the testing situation and projected into thematic content when the stimuli are

similar to the circumstances in which these functions were originally learned (Auld, 1954).

Based this theoretical rationale for the thematic apperception technique in studying personality, TEMAS was developed in response to the concerns, raised earlier, about assessment of ethnic and linguistic minority children. Consequently, the traditional TAT was modified in TEMAS by presenting ethnically pluralistic characters in familiar settings, while engaging in antithetical situations representing common problematic circumstances in urban life (Costantino, 1978). Thus TEMAS is a an attempt to increase the ethnocultural relevance of projective stimuli to minority children, and to present familiar scenes associated with life experiences in inner-city settings. The rationale for these and other departures (e.g., reduced ambiquity, chromaticity) from traditional thematic apperception technique is based on empirical research conducted with the TAT, and is summarized below.

The presentation of culturally relevant and familiar stimuli in projective tests was explored on by Thompson (1949) who developed a black TAT based upon the assumption that similarity between the stimulus and the examinee promotes identification with the characters in the pictures, and, therefore, provokes greater verbal fluency and self-disclosure. Traditionally, projective techniques have embraced the psychodynamic notion that ambiguous stimuli bypass the

examinee's ego defenses, thereby allowing latent psychological conflict to be more freely expressed (Murstein, 1963). However, TEMAS was conceived following more recent thinking that diminished ambiquity and increased structure in projective stimuli facilitate verbal fluency and yield a more focused understanding of the examinee's personality functioning (Epstein, 1966). That is, when projective stimuli are structured to "pull" specific personality functions (unlike ambiguous stimuli), the diagnostician may achieve a more reliable and valid clinical interpretation of thematic content.

Both clinicians and researchers alike acknowledge that color has strong impact on the perception of Rorschach cards, (Murstein, 1963) and that integration of color and from is considered a sign of emotional growth and cognitive organization (Siipola, 1950). During the 1950's several studies documented that chromatic TAT pictures more accurately discriminated between clinical and control subjects that achromatic pictures and also enhanced verbal fluency (Brackbill, 1951; Thompson and Backrach, 1951) Murstein (1963) explained that color facilitates differentiation between thematic responses of psychiatric and normal examinees, apparently since achromaticity reinforces sadness as an effective response to TAT pictures. Thus, based upon this evidence, TEMAS pictures were developed in life-like color.

The representation of psychological conflict in TEMAS

pictures was based on the methodology of Kohlberg (1976) who suggested that moral judgement develops only when the child is able to understand reversible operations which are antithetical in nature. Hence, Kohlberg developed a series of stories portraying anthithetical moral dilemmas in order to assess the moral development of children. Similarly, TEMAS pictures portray a split scene showing psychological dilemmas which require a resolution. Like Kohlberg's moral dilemmas, TEMAS examinees must resolve the antithetihcal situations portrayed in the split pictures; and the examining clinician evaluates the adaptiveness of their resolution of the conflict. The antithetical situation depicted in TEMAS pictures were designed to evoke disclosure of specific personality functions which are prominent in personality theory and also are key diagnostic indices of psychopathology: Interpersonal relations, aggression, anxiety/depression, achievement motivation, delay of gratification, self concept of competence, self/sexual identity, moral judgement, and reality testing (Bellak, Hurvich and Gediman, 1973; Costantino, 1978).

An initial set of TEMAS pictures was drawn by a professional artist, who worked closely with the test author (Costantino. 1978) in an attempt to pictorially represent the psychosocial situation described to him. In some situations characters were shown engaging in internal dialogues, such as a child in front of a piggybank with a coin in hand imagining buying

an ice cream cone immediately, or saving money to buy a bicycle in the future. This picture represent ambivalence associated with ability to delay gratification (Mischel, 1966). Other pictures, such as 9B and 9G (see TAble 1,) are pictorial representations of the poem by Robert Frost, "The Road Not Taken." These pictures depict a boy or girl at a crossroad in a forest undecided to take the road already taken by his or her peers, or to take the road which no one has taken (evoking interpersonal relationships and anxiety feelings). A brief description of the final set of 23 pictures resulting from pilot studies is presented in Table 1, which also denotes the personality functions pulled by each picture. As Table 1 illustrates, the TEMAS pictures embody a wide variety of problematic life situation and experiences in inner-city, impoverished environments. Table 1 descriptions include intrafamilial scenes within the home, solitary dream-like and fantasy states, street scenes involving peers and adults, sports activities, and situations occurring in school settings. The antithetical situations portrayed in the pictures accommodate a balance of positive or negative feelings to be projected in thematic content, manifested behaviorally in either adaptive or maladaptive resolutions of the dilemmas presented. These topics are structured to pull themes expressive of varying degrees of psychopathology ranging from severe pathology (e.g., morbidity, suicide, depression, gender confusion,

impulsivity, isolation, delusion) to lack of pathology (Costantino, Malgady, & Rogler, 1987-in press). Some examples of underlying motives revealed in thematic content which vary in level of expressed psychopathology are provided in the scoring procedures.

Table 1

Picture No.	Description
*1B/G.	A mother is giving a command to her son/daugher, while the father is in the background. Peers are urging the boy/girl to play basketball/jump rope with them (IP, DG)
2.	A father is watching television and drinking. a son and daugher are standing behind him. The mother is carrying her infant and vacumming, while two additional daughters and a son are by the mother side (IP, DG)
3.	A father is telling his son who wants to watch T.V. to do his homework. Three siblings are watching television. (IP, AM, DG)
4.	An angry father is threatening the mother while a young woman lies in bed covering her face with her hands. Two boys and girls are clinging to the mother (IP, AGG, ANX, MJ)
5.	An adolescent is sleeping in bed and dreaming of a picnic with a female, or of a dark figure

entering a bedroom at night. (IP, AGG)

6. A boy and a girl dress up in adult clothes in the attic, while they look nostalgically at a cradle and some baby toys. (IP, SI)

*7. Angry mother is watching her son and daughter arguing over a broken lamp. (IP, AGG, MJ)

8. A male teacher is with a group of attentive students. A female teacher/principal shows a mother and a father a broken window with a boy and girl, behind the parent. (IP,AGG, AM, MJ)

9B/G. A boy/girl with outstretched arms is standing at the junction of two roads in the forest. Friends call to him/her to join them walking on the right hand road. A lonely road is on the left. (IP, ANX)

*10B/G. A boy/girl is holding money standing in front of a piggybank, imagining him/herself looking at a bicycle in a shop window or buying an ice cream cone. (DG)

11. A mother is carrying a bag of groceries with her son and daughter helping her. A woman is trying to protect herself from two boys and a girl who are stealing groceries from her bag. (IP, AGG, MJ)

12B/G. A group of boys/girls are cooperating in

the repair of a bicycle. A group of boys/girls are fighting (IP, AGG)

13B/G. A boy/girl is standing in front of a bathroom mirror imagining the reflection of his/her parents in the mirror. (IP, SCC, SI)

*14B/G. A boy/girl is studying in his/her room. A group of boys and girls are listening to music in the living room. (IP, SCC, SI)

*15. A policeman is giving an award to a group of PAL baseball player. A policeman is arresting a group of boys and girls who broke a window and stole merchandise. (IP, AGG, AM, MJ)

16. A boy is climbing up a rope in a gym and girls are jumping over a wooden horse. A group of two and two girls on one side of the picture are expressing encouragement and admiration. A group of two boys and two girls on the other side of the picture are expressing fearfulness. (IP, AM, SCC)

17B. A boy/girl is studying and daydreaming about him/herself receiving an "A" or "F" from the teacher. (ANS, AM, SCC)

18B/G. A boy/girl studying and daydreaming about becoming an actor/actress, a doctor, or a drunk/bag lady. (AM, SCC)

19B/G. A boy/girl is in a window imagining him/herself

being saved from a building in flames by a fireman or by Superman/Wonder Woman. (ANX, RT)

20. An adolescent in bed is dreaming of a scene showing a horse trapped on a hill over a river, or a path leading to a castle. (ANX)

*21. An adolescent in bed is dreaming of a friendly monster eating something or of a monster making threats. (AGG, ANX RT)

*22B/G. A boy/girl is standing in front of a bathroom mirror, imagining his/her face reflected in the mirror with attributes of both sexes.

23B/G. A boy/girl is rejected by his/her parents, and imagines running away from home and living alone, or standing on a bridge thinking of committing suicide. (IP, ANX) (Costantino, 1986).

Note: (*)Denotes a card belinging to the short form. The designations and "B" and "G" refer to sex-specific cards (for boys and girls, respectively. Personality functions pulled by each picture are coded parenthetically as follows: interpersonal relations (IP, aggression (AGG), anxiety/depression (ANX), achievement motivation (AM), delay of gratification (DG), self concept of competence (SCC), sexual

identity (SI), moral judgement (MJ), reality testing (RT).

ADMINISTRATION AND SCORING

After establishing rapport with the examinee, the examiner introduces the test with the following instructions: "I have several interesting pictures that I am going to show you," look at the persons and places in the pictures and tell me a complete story about each picture, one that has a beginning and an end. The story should answer three question: "What is happening in the picture now? What happened before? What will happen in the future?" Following presentation of a picture, the examiner records the examinee's verbal reaction time, the spontaneous time and then the total storytelling time. The minimum time for a story is two minutes, and the maximum time for a story is typically four to five minutes.

Inquiries are conducted to elicit the identity and interrelationships of the characters, identification of settings, and the affective state of the main character if this information is omitted. The examinee should be given the opportunity to tell a complete story in a spontaneous manner (i.e., without prompting). A story is complete if it relates: (1) the identities and relationships of the characters, the setting, and what the characters are doing; (2) what the characters did before; (3) what the characters will be doing in the future; and (4) what the

main character is thinking and feeling upon resolution of the antithetical situation.

Stories are recorded verbatim by the examiner. The full 23 pictures are administered either in two one-hour sessions, or in one session with a break after one hour. If an examinee is given the TEMAS short form, administration of the 9 pictures should be completed within 45 minutes in one session, generally without interruption.

Personality functions are scored on a Likert-type, four-point scale as follows. A score of "1" indicates the presence of a highly maladaptive resolution of conflict. For example, themes of murder, rape and assult are always scored "1" for interpersonal relations, aggression and moral judgement. A suicidal theme earns a "1" under the anxiety/depression function. The decision to drop out of school or steal rather than work results in a "1" for achievement motivation and delay of gratification. The anticipation of complete failure and concomitant refusal to attempt a given task results in a "1" for self concept of competence. A character who changes sexes or rejects his or her gender earns a "1" in sexual identity. Scores of "1" in moral judgement reflect a total lack of regard for the consequences of antisocial behavior. Severly impaired reality testing would be scored only for the most bizarre and impossible resolutions (e.g., inanimate objects come alive and kill; a child causes harmful events to occur

by a strange power of the mind). A score of "2" for any personality function reflects a moderately maladaptive resolution. For example, children cheat and get away with it; a conflict is resolved by fighting; money is squandered rather than saved; homework is avoided in favor of play; a child runs away form home and never returns; the monster in a dream could also be in the backyard. A score of "3" represents a partially adaptive resolution. Here, for example, the children who cheat are caught and punished; fighting ceases in favor of compromise; money is saved for a time and then spend; homework is grudgingly completed; a runaway child returns home; the monster does not come to life as feared. A score of "4" represents a highly adaptive resolution. The child must perceive the intended conflict and solve the problem in a mature, viable manner. There is implicit in a score of "4", a striving for the greater good, sense of responsibility and an intrinsic motivation. Here for example, a child rejects the notion of cheating as contrary to learning; conflicts are discussed and compromises reached; money is saved for the future; homework is completed because good grades are valued; a child decides to talk to parents rather than run away; dreams are never real.

In addition to personality functioning, TEMAS is also scored for a number of descriptive indices: number of unanswered inquiries, reaction time (sec), and total storytelling

time (min), and verbal fluency (word count). Perceptual style is scored for fragmentation, elaboration, omission, and transformation of perceptual details. Fragmented responses are such that the subject's primary focus is on an isolated part of picture (e.g., main character's arm), as opposed to a holistic focus. Elaboration refers to whether stories tend to be restricted in context in a perseverative theme. Omissions and transformations of perceptual detail in the pictures is scored when the details are related to the identity of perceptual of main and secondary characters, event and setting. Affective functioning is scored with respect to the emotional state attributed to the main character at the end of the story after resolution of the conflict. The main character's affect is recorded as happy, sad, angry, fearful, neutral and/or ambivalent. In addition, the congruence of this affective state with the content of the story is noted. Descriptive indices are tabulated by summing frequency of occurrence across pictures (Costantino, Malgady, & Rogler, 1987-in press).

PRELIMINARY STUDIES

A pilot study was conducted with a group of eight children ranging in age from 6 to 12. Each child was asked to tell a story about each picture, responding to the questions: What is happening? Who are these characters? Are they related? What are they saying? Where are these people? Children were retested after a four-month interval to establish

test-retest-reliability. Only those pictures which reached a .80 inter-child agreement and .90 test-retest stability on all five questions were retained (Costantino, 1978). A revised set of cards were developed, resulting in a reduction to 23 pictures, 12 for both sexes and 11 sex-specific (Costantino, 1986).

The TEMAS pictures were structured to pull nine specific personality functions (which are rated on a 4-point scale) based upon the nature of psychological conflict confronting the main character of the pictures: interpersonal relations, aggressions, anxiety and depression, achievement motivation, delay of gratification, self concept of competence, sexual identity, moral judgement and reality testing. Accordingly, a study was conducted to assess the concordance among a sample of 14 practicing school and clinical psychologists, recruited from community mental health centers and public schools in New York City. Psychologists averaged nearly 8 years experience in testing and counseling minorities and 9 year experience in administering projective techniques. With respect to ethnicity, seven were white, one black and six were Hispanic. Clinical orientation of the psychologist include eclectic, analytic/dynamic, cognitive, and system. The psychologist were presented the TEMAS pictures and asked independently to indicate which, if any, of the nine personality functions were pulled by each picture. They also were given the liberty of suggestion pulls other than

the nine listed by the author. Results indicated substantial concordance among clinicians regarding the pulls of TEMAS pictures, ranging from 71-100% agreement. These results, then served to define and corroborate the specific personality functions to be scored with each picture.

Since verbal fluency if the sine qua non of validity with projective techniques (Anderson and Anderson, 1955), two preliminary studies were conducted to compare minority examinees' articulateness on TEMAS versus the TAT. In the first study, Costantino, Malgady, and Vazquez (1981) administered six TAT and minority TEMAS pictures to fourth and fifth grade Hispanic children. Results of this study indicated that Hispanic children were significantly more verbally responsive to TEMAS pictures that TAT pictures, and this effect was more enhanced for females than males. Consequently, a similar study was conducted (Costantino and Malgady, 1983) with a larger number of TEMAS and TAT pictures to enhance internal consistency realiability of the data, broadening the age range of subjects (grades K-6), comparing both Hispanics and blacks to a white examinee group. The results of this second study corroborated the sex differences in verbal fluency reported by Costantino, Malgady, and Vazquez (1981), and also showed that Hispanics and Blacks were more verbally fluent on TEMAS compared to the TAT. Thus, these findings contradict the notion that minorities are deficit in verbal fluency on projective

tests, and also provide a cornerstone for the potential validity of TEMAS.

PSYCHOMETRIC PROPERTIES OF TEMAS

Previous research established an objective consensus for scoring TEMAS protocols, temporal stability of thematic content, and that minority examinees are more articulate on TEMAS relative to the TAT. The next study investigated the reliability of scoring TEMAS pictures and potential difference as a function of sex, age and SES. The subjects were 73 Puerto Rican students attending grades K-6 in public schools in New York City. The mean age of the subjects was 9.19 years. With respect to the occupational scale of Hollinghead's Index of Social Position, subjects were from low to lower-middle class families. According to teacher and parental reports, subjects were not undergoing psychotherapy for personality disturbance, nor presenting significant behavioral problems in school. TEMAS was administered to subjects with the 23 pictures presented in random order by bilingual Hispanic examiners. All subjects were tested individually by graduate psychology students in two testing sessions conducted in the public schools. Hispanic subjects were tested in their dominant language. Subjects subsequently responded by telling a story about each picture for typically two to four minutes, which was recorded verbatim by the examiner. In the case of subjects who responded in Spanish, after being recorded in Spanish, stories were translated

into English. All tests were scored by bilingual graduate psychology interns, who were blinded to subjects' demographic background.

Internal consistency reliability of TEMAS indices was estimated by computing coefficient alpha. Reliability of personality functioning indiced was computed only on particular pictures intended to "pull" specific functions. Pictures pulling interpersonal relations, aggression, and moral judgment were highly internally consistent (.72-.92), whereas anxiety/depression achievement motivation, delay of gratification, self-concept of competence, sexual identity, and reality testing evidence much lower reliabilities (.45-65). In part, reliability of the latter functions may be attributed to attenuation by "test length"; that is, scores are based on relatively few (3-8) TEMAS pictures. Interrater reliability in scoring TEMAS protocols was investigated by comparing two independent raters' evaluation of a randomly selected sample of 27 subjects. Examinees' protocols were rated twice and the two scores were correlated for each picture. Correlations were low to moderate for reality testing (r =.32 - 60), sexual identity (r = .32 -.36), and achievement motivation (r = .20 -.65), and substantially higher for the remaining functions (median rs = .50 - .68). TEMAS indices were correlated with subjects' age sex (dummy coded), and socioeconomic status (SES). By and large, the patterns of correlations observed suggested that TEMAS scores are

virtually independent of age, although statistically significant ($p = .05$), but low negative correlations exist between age and aggression (-.26), and sexual identity (-.34). All correlations with sex were negligible. Finally, SES had no significant influence on TEMAS scores, possibility due to its restricted range.

A follow-up study was conducted with sample of examinees screened for presenting severe behavioral problems in school, prior to their referral for psychotherapeutic treatment. This study sought to gather evidence of validity, both concurrently and predicting psychotherapeutic treatment outcomes. The subjects in this study were recruited from grades K-3 in New York City public schools. Of nearly 900 students screened by teacher rating, 210 (120 male, 90 female) falling below the median rating were solicited for participation in the study, and for subsequent referral to participate in a comparative study of psychotherapeutic treatment modalities (Costantino, 1979). Subjects' families were from low to lower-middle class, based on the occupational scale of Hollingshead's Index. Subjects were administered TEMAS pictures as in the prior study. In order to determine the relationship of TEMAS personality assessment to intellectual functioning, subjects were also administered three subtests of the WISC-R (in Spanish, Escala De Inteligencia Para Niños): Vocabulary, Comprehension, and Similarities. For the purpose of establishing concurrent validity, subjects

were administered four criterion tests, and their adaptive behavior in experimental role-playing situations was observed and rated by examiners.

Each TEMAS index was correlated with subjects' sex; (0 = male), (1 = female); age, and WISC IQ (vocabulary, comprehension and similarities subtests). There were no significant sex nor IQ effects on TEMAS indices, but age effects were low to moderate ($\underline{rs}$ = .16 to .37). Results of multiple regression analyses indicated that TEMAS profiles significantly ($P < .05$) predicted ego development (sentence completion test) ($\underline{R}$ = .39), mothers' behavior ratings ($\underline{R}$ = .38),and teachers'behavior rating ($\underline{R}$ = .49); and observations of delay of gratification ($\underline{R}$ = .32), self concept of competence ($\underline{r}$ = .50), disruptive behavior (R = .51), disruptive behavior ($\underline{R}$ = .511), and aggressive behavior ($\underline{R}$ = .32). However, there was no significant multiple correlation with respect to trait anxiety. Thus, multiple regression coefficients ranged from .32 to .51, providing moderate evidence of concurrent validity for TEMAS profiles with respect to these selected criterion variables.

In an effort to evaluate the utility of TEMAS profiles for predicting psychotherapeutic treatment outcomes, a random sample of 298 subjects were randomly assigned to three therapeutic interventions (Costantino, 1979). Criterion tests and role-playing situations were administered again after 20 weekly treatment sessions. Hierarchical multiple

regression analysis was used to test the utility of TEMAS profiles in predicting post-therapy scores on the criterion measure, independent of pre-therapy scores.

Multiple regression coefficients for prediction of criterion measures and observation ratings were statistically significant ($p < .05$) and high with respect to ego development ($R = .69$), trait anxiety ($R = .64$), mothers' and teachers' behavior rating ($R = .65 - .71$), delay of gratification ($R = .67$), disruptiveness ($R = .57$), and aggression ($R = .63$). Self concept of competence was not significantly related to TEMAS. Further, TEMAS profiles appear to provide extremely useful pre-therapeutic information, in the sense that 6-22% of the variance in post-therapy outcomes was predictable from TEMAS pretest, independent of criterion pretests. Thus, this analysis lends support for the clinical utility of TEMAS as a tool for evaluation of psychotherapeutic outcomes (Malgady, Costantino, and Rogler, 1984).

Discriminant analyses were conducted with Hispanic ($N = 138$) and Black ($N = 73$) outpatients at psychiatric facilities and children in public schools in New York City. Results indicated that TEMAS profiles significantly discriminated the two groups, within both the Hispanic and Black samples. Personality profiles discriminated the two groups with 89% accuracy for Hispanics and 91% accuracy for Blacks. Within the clinical sample, the TEMAS indices did not discriminate significantly between different DSM-III classifications

of disorders of childhood and adolescence.

The present study was conducted to standardize and validate TEMAS cross-culturally with public and private school children in San Juan, Puerto Rico. Children were administered TEMAS on two occasions (separated by a two-month interval) to establish test-retest- reliability, and three criterion measures were administered for the purpose of establishing concurrent validity (Spielberger's State-Trait Anxiety Scale; Piers-Harris Self Concept Scale; NIMH Center for Epidemiological Studies -- Depression Scale). In addition the TEMAS was administered to psychiatric outpatients diagnosed according to DSM-III as experiencing conduct, anxiety or adjustment disorder of childhood and adolescence. Construct validity was established by discriminating between the psychiatric outpatients and a comparable sameple of nonpsychiatric elementary school children.

METHOD

Subjects

The subjects were public and private school students (N = 280) and psychiatric outpatients (N = 50) from San Juan, Puerto Rico. The school sample consisted of 140 public and 140 private school students, equally distributed with respect to sex, from grades kindergarten to six in the San Juan metropolitan area. The public v. private school distinction was introduced to ensure variability due to socioeconomic status, (SES) which has been restricted

to low SES subjects in New York City in previous studies. The psychiatric sample consisted of male and female outpatients from the University of Puerto Rico Medical Center who were diagnosed according to DSM-III as experiencing conduct, anxiety or adjustment disorders of childhood and adolescence.

The three groups were comparable in age (*M* = 8.63, *SD* = 2.12). However, there were rather dramatic differences between the groups with respect to household composition and socioeconomic factors. The father was present in the household in 89.7% of the private school families, compared to only 59% in the public school and 40% in the clinical group. Moreover, 6.7% of the private school families were receiving some form of public assistance (e.g., food stamps; subsidized housing) relative to 65.2% of the public school and 60.4% of the clinical families. In terms of socioeconomic status, father's and mother's occupations were higher on the Hollingshead scale in the private school group, *M* =4.83 (*SD* = 1.60) and *M* = 5.29 (*SD* = 1.27), respectively, compared to father and mother means of 2.84 (*SD* = 1.44) and 3.87 (*SD* = 1.74) in the public school sector and 2.86 (*SD* = 1.73) and 3.50 (*SD* = 2.10) in the clinical group. Moreover, mothers and fathers in the private school group were better educated, with a mean of about 15.5 years of education, compared to both the public and clinical groups with means of 9.8 to 10.75 years of education.

Procedures

The TEMAS test was individually administered to subjects with the 23 pictures presented in random order by Puerto Rican examiners. Examiners were graduate psychology students who were trained to administer the projective test. Subjects were tested in one two-hour session conducted in private rooms in the schools and the clinic. The examiners administered TEMAS according to the standardized instructions described earlier. Tests were scored by graduate psychology interns who were blinded to subjects' demographic backgrounds. In addition, half (N=140) of the public and private school students were retested after a two-month interval for the purpose of establishing test-retest reliability.

In order to assess concurrent validity, subjects were tested with three criterion-related measures: the trait scale of Spielberger's State-Trait Anxiety Inventory (Inventario de Ansiedad Estado Y Rasgo para Niños), the Piers-Harris Self Concept Scale (Spanish translation), and the NIMH Center for Epidemiological Studies Depression Scale (Spanish translation).

RESULTS

Means and standard deviations on the TEMAS scoring indices are shown for each group in Table 1. Scores reported are averaged across pictures. For cross-cultural comparison, means and standard deviations are also reported for a public school sample of 167 Puerto Ricans in New York City and 67 Puerto Ricans from outpatient clinics diagnosed with

the same DSM-III classifications. As Table 2 shows, the Puerto Rican private school subjects were more fluent, exhibited fewer omissions and transformations, and required fewer inquiries than public school subjects, who, in turn, were superior to the clinical group. This pattern of results also was reflected in recognition of conflict, sequencing, imaginativeness and inter-character relationships. With respect to affective functioning, the three groups were comparable in terms of ascribing happy and ambivalent emotional states to the main character; however, clinical subjects ascribed more sadness, anger, and neutral affect but less fearful and were less congruent with the theme of their stories. With respect to personality functioning, the private school group revealed more adaptive themes than the public school group, who were more adaptive than the clinical group except for rated aggressiveness, achievement motivation and reality testing.

Comparison of the Puerto Rican sample with the New York sample reveals that the low SES New York subjects generally have more positive TEMAS profiles than their higher SES (private school) native Puerto Rican counterparts. Moreover, with the exception of sexual identity, even the New York clinical sample had more adaptive or comparable personality functioning profiles than the public school Puerto Rican sample. A surprising result was with respect to fluency and total time. In the Puerto Rican samples,

the private school group talked for less time than the public school group, but they were substantially more fluent. On the other hand, the clinical group required considerably more prompting to complete their stories, but nevertheless spoke less than the standard minimum of two minutes. The New York subjects were much more verbally fluent than antive Puerto Rican subjects, which is an unanticipated finding since a given oration requires more words to communicate in Spanish than in English.

Reliability

Internal consistency and test-retest reliability estimates of the TEMAS indices are reported in Tables 3 and 4 for the public, private, and clinical groups. Test-retest reliabilities are based on a random subsample of N = 140 public and private school subjects.

As Table 3 shows, the objective scoring indices generally exhibit acceptable internal consistency estimates in the three groups. Fragmentation and transformations, which rarely occur, had numerous TEMAS pictures with zero variance, thus lowering the estimates of internal consistency. With respect to the affective indices, internal consistency reliabilities are moderate to high, with the exception of ambivalence in the private school group (again because of items with no variance; see mean in Table 2). The ratings of personality functions exhibited generally lower internal consistencies compared to the more objective indices.

Self/sexual identity moral judgement and reality testing show low internal consistency estimates, but this can be attributed to the relatively few number of pictures which pull these functions (i.e., these are analogous to 3-6 item tests). Moreover, the best internal consistency estimates were derived from the public school group. The most reliable personal functions across the three groups appear to be person relations, aggression, and self concept.

Test-retest reliabilities over a two-month interval are reported in Table 4 for the two random subsamples of 70 public and 70 private school subjects. As Table 4 shows, the reliabilities are uniformly low, with the exception of the anxiety and reality testing personality functions. These reliability estimates compare unfavorably with estimates from New York samples of Puerto Ricans when reliability was based on content (not ratings of pathology). Since different clinicians scored the pre- and post-test protocols, these are underestimates of true test-retest stability since they are further attenuated by inter-rater reliability.

Concurrent Validity

The concurrent validity of the TEMAS personality function profile was evaluated by conducting multiple correlation analyses with each of the three criterion measures (anxiety, depression, self concept) within each of the three groups. In the public school group, only delay of gratification was significantly correlated with trait anxiety (R = .27,

$p < .01$); reality testing, achievement motivation, and delay of gratification were significantly correlated with depression ($R = .35$, $p < .001$; and achievement motivation and person relations were significantly correlated with self concept ($R = .27$, $p < .01$). In the private school group, self/sexual identity and self concept of competence were significantly related to trait anxiety ($R = .26$, $p < .05$) and depression $R = .24$, $p < .05$); and moral judgement and achievement motivation were significantly correlated with self concept $R = .22$, $p < .05$). Due in part to the small sample size ($N = 50$), none of the multiple correlations were significant in the clinical sample. Combining the public and private school groups resulted in slightly higher multiple correlations, with essentially the same pattern of significant personality functions as reported above. In summary, the magnitude of concurrent validity coefficients with respect to paper-and-pencil rating scales is somewhat lower in the Puerto Rican samples compared to validity reported on New York samples (cf., Malgady, Costantino, & Rogler, 1984).

Construct Validity

A two group (public/private school vs. clinical) discriminant analysis was conducted using TEMAS profiles to predict clinical vs. nonclinical status. The nine TEMAS personality functions significantly discriminated the two groups, $F (9, 321) = 3.52$, $p < .001$, explaining a modest 9% of the

between-group variance. Univariate t-tests indicated that person relations, anxiety, delay of gratification, self concept of competence, self/sexual identity, and moral judgement significantly differentiated the two groups. The strongest discriminators were person relations and anxiety (ps < .001). Classification analysis revealed that 69% of the subjects were correctly reclassified into their original groups on the basis of TEMAS discriminant functions. Thus, the results of this analysis lends some support to the construct validity of the TEMAS personality profile as a gross discriminator of clinical vs. nonclinical status.

DISCUSSION

The TEMAS test (Minority Version) was originally developed as a clinical tool, presenting ethnically familiar characters in urban and fantasy settings, in order to facilitate minority children's identification with the stimuli and thereby enhance verbal fluency and self disclosure. Earlier studies with New York City Urban examinees indicated that Hispanic and Black children are more verbally fluent in telling stories aboutTEMAS stimuli than the TAT (Costantino, Malgady, & Vazques, 1981; Costantino & Malgady, 1983), thus establishing a potential for valid personality assessment of minority children. Other studies established the reliability of TEMAS, some rudimentary evidence of concurrent validity, and clinical utility for predicting psychotherapeutic treatment

outcomes (Malgady, Costantino, & Rogler, 1984).

There is a need to create cross-cultural norms for projective tests, as advocated recently by Exner and Weiner (1982) and Dana (1986). This issue is addressed by the standardization of TEMAS on Hispanic and Black children in the United States, and by our recent effort to collect data on native Puerto Rican children. Similar work is provided by Avila Espada (1986) who has developed a comprehensive scoring system for the TAT, which assesses interpersonal relationships, aggression, depression, and achievement motivation, among other variables.

The TEMAS test was recently published in two versions, a minority form for Hispanics and Blacks and a parallel form for whites (Costantino, 1986). Results of the present study lend support to the use of TEMAS with examinees in Puerto Rico. Reliability and validity estimates for the Puerto Rican samples, however, were less compelling than for the mainland norm groups. Further, discrimination of clinical and nonclinical examinees suggests less clinical utility (69% accuracy) than in other mainland studies (89% accuracy). Further analyses of the TEMAS stimuli are currently in progress to examine characteristics of the stimuli on a card-by-card basis. Preliminary evidence suggests that some of the TEMAS cards do not pull the designated personality functions as consistently in the Puerto Rican samples. This seems to be associated with the discrepancy between

the urban settings depicted in a New York environment compared to urban and rural settings in Puerto Rico. Thus, further analyses will be conducted to determine whether a reduced set of TEMAS stimuli will demonstrate more acceptable reliability and validity, by eliminating cards which behave differently in the Puerto Rican environment.

Mental health clinical services research on Hispanics has been organized according to a temporal sequence of five interlocking phases (Rogler et al, 1983): the emergence of mental health problems; utilization of clinical services; assessment and diagnosis; psychotherapeutic intervention; and community rehabilitation. Inadequate epidemilolgy of mental health needs, underutilization of community mental health resources, culturally biased assessment practices, culturally insensitive treatment modalities, and lack of follow-up services are formidable barriers hindering the mental health care of Hispanics. At the hub of this network of barriers looms the problem of reliable and valid personality assessment and psychodiagnosis, since such evaluation will shape the nature of epidemiological findings and the course of subsequent treatment efforts. Although the TEMAS test is still rudimentary in development, the technique is supported by promising psychometric findings on reliability and validity.

REFERENCES

Ames, L.B. and August, J. (1966). Rorschach response of Negro and White 5-10-10 year olds. Journal of Genetic Psychology, 10, 297-309.

Anderson, H. and Anderson, G. (1955). An introduction to projective techniques. New York: Prentice Hall.

Atkinson, J.W. (1981). Studying personality in the context of an advanced motivational psychology. American Psychologist. 36, 177-128.

Auld, F. (1954) Contribution of behavior theory to projective testing. Journal of Projective Techniques. 18, 421-426.

Bellak, L. (1971. The Thematic Apperception Test and the Children Apperception Test in Clinical Use. New York: Grune & Stratton.

Bellak, L.; Hurvich, M.; and Gediman, H.K. (1973). Ego functions in schizophrenics, neurotics, and normals. New York: John Wiley.

Booth, L.J. (1966). A normative comparison of the reponses of Latin American and Anglo American children to the Children's Apperception Test. In M.R. Hawort (ed.), The C.A.T: Facts about fantasy. New York: Grune and Stratton.

Brackbill, G.A. (1951). Some effects of color on thematic fantasy. Journal of Consulting Psychology, 15, 412-418.

Costantino, G. (1978 November). Preliminary report on TEMAS: a new thematic apperception test to assess ego functions in ethnic minority children. Paper presented at the Second American Conferences on Fantasy and the Imaging Process, Chicago.

Costantino, G. (1979). Folktales as therapy with Hispanic children. NIMH grant no. 1R01 MH 33711-1-2-3.

Costantino, G.; Malgady, R.; and Vazques, C. (1981). A comparison of the Murray-TAT and a new thematic apperception test for urban Hispanic children. Hispanic Journal of Behavioral Sciences, 3, 291-300.

Costantino, G. and Malgady R. (1983) Verbal fluency of Hispanic, Black and White children on TAT and TEMAS a new thematic apperception test. Hispanic Journal of Behavioral Sciences, 5, 199-207.

Costantino, G., Malgady, R., and Rogler, L. (1985). Cuento Therapy Folktales as a culturally sensitive psychotherapy for Puerto Rican Children. Monograph No. 12, Bronx, N.Y.: Hispanic Research Center, Fordham University.

Costantino, G., Malgady, R., and Rogler, L. (1986). Cuento therapy: A culturally sensitive modality for Puerto Rican children Journal of Consulting and Clinical Psychology, 54, 639-645.

Costantino, G. (1986) TEMAS (Tell-Me-A-Story) Stimulus Cards. Minority and Nonminority Versions. Los Angeles: Western Psychological Services.

Costantino, G., Malgady, R., and Rogler, L. (1987-in Press). TEMAS, A multicultural, pluralistic thematic apperception test. Los Angeles: Western Psychological Services.

Dana, R.H. (1986). Thematic Apperception Test used with adolescents. In A.I. Rabin (Ed.), Projective techniques for children and adolescents (pp. 14-36). New York: Springer.

Espada, A.A. (1986). Manual operativo para el Test de Appercepcion Tematica. Madrid, Spain: Ediciones Piramide, S.A.

Epstein, S. (1966). Some considerations on the nature ambiguity and the use of stimulus dimensions in projective techniques. Journal of Consulting Psychology, 30, 183-192.

Exner, J.E. (1978). The Rorschach a comprehensive system. Vol. II Current research and advanced interpretation. New York: Wiley.

Exner, J.E., & Weiner, I.B. (1982). The Rorschach: A comprehensive system. Assessment of children and adolescents (vol. 3). New York: John Wiley.

Good, B.J. & DelVecchio-Good, M.J. (1986). The cultural context of Diagnosis and therapy: a view from medical anthropology. In M.R. Miranda and H.H.L. Kitano (Eds) Mental health research and practice in minority communities: Development of culturally sensitive training programs. Rockville, Maryland: National Institute of Mental Health.

Holtzman, W.H.; Thorpe, J.S.; Swartz, J.D.; and Herron, E.W. (9161). Inkblot perception and personality. Austin: University of Texas.

Kohlberg, L. (1976). Moral stages and moralization: The cognitive-developmental approach. In T. Lichona (ed.), Moral developmental and behavior: Theory, research, and social issues. New York: Holt, Rinehart, and Winston.

Lubin, N.M. (1955). The effect of color in the TAT on production of mentally retarded subjects. American Journal of Mental Deficiency, 60, 366-370.

McClelland, D.C., Atkinson, J.W., Clark, R.A., and Lowell, E.L. (1953). The Achievement Motive. New York: Irvington.

Malgady, R., Costantino G., and Rogler, L. (1984). Development of a Thematic Apperception Test (TEMAS) for urban Hispanic children. Journal of Consulting and Clinical Psychology, 52, 6, 986-996.

Malgady, R., Rogler, L., & Costantino, G. (1987). Ethnocultural and linquistic bias in mental health evaluation of Hispanics. American Psychologist, 42, 228-234.

Mischel, W. (1966). Theory and research on the antecedents of self imposed delay of reward. In B.A. Maher (ed.): Progress in Experimental Personality Research. New York: Academic Press, 3.

Murray, H.A. (1943). The Thematic Apperception Test. Cambridge, Massachusetts: Harvard University Press.

Murstein, B.I. (1963). Theory and research in projective techniques, New York: John Wiley.

Oakland, R. (ed) (1977). Psychological and educational assessment of minority children. New York: Brunner/Mazel.

Olmedo, E.L. (1981). Testing linquistic minorities. American Psychologist, 36, 1078-1085.

Padilla, A.M. (1979). Critical factors in the testing of Hispanic Americans: A review and some suggestions for the future. In R. Tyler and S. White (eds.) Testings, Teaching and Learning: Report of a conference on testing. Washington, D.C.: NIE.

Padilla, A.M. and Ruiz R.A. (1973). Latino mental health: A review of the literature. (DHEW Publication No. HSM 73-9143). Washington, D.S.: U.S. Government Printing Office.

Piers, E.V. and Harris, (1984) Piers-Harris Children's Self Concept Scale. Los Angeles, CA: Western Psychological

Services.

Piaget, J. and Inhelder, R. (1971). Mental Imagery in the Child. New York Basic Books.

Piaget, J. (1972). Play, dreams and Imitation in Childhood. New York: Norton.

Rapaport, D. (1942). Principles underlying projective techniques. Character and Personality. 10, 213-219.

Rogler, L.H. et al. (1983). A conceptual framework for mental health clinical service research on Hispanic population. Monograph No. 10. Hispanic Research Center Fordham University.

Siipola, E.M. (1950). Influence of color reactions to inkblots. Journal of Personality, 18, 358.

Sobel, H.J. (1981). Projective Methods of Cognitive Analysis. In Merluzzi, T., Glass, C., and Genest, M. (eds.) Cognitive Assessment, New York: Garfield Press.

Spielberger, C.D., Edwards, C.D., Lushene, R.C., Montouri, J., and Plutzek, D. (1973). Preliminary test manual for the state-trait inventory for children. Palo Alto, CA: Consulting Psychologist Press.

Struthers, J. and DeAvila, E.A. (1977). Development of group measure to assess the extent of pre-logical and pre-causal thinking in primary school-age children. In R. Oakland (ed.), Psychological and educational assessment of minority children. New York: Brunner/Mazel.

Thompson, C.E. (1949) The Thompson modification of the thematic apperception test. Journal of Projective Techniques, 17, 469-478.

Thompson, C.E. and Bachrach, J. (1949) The use of color in the Thematic Apperception Test. Journal of Projective Techniques, 173-184.

Wechsler, D. (1968). Escala de Inteligencia para niños. New York: Psychological Corporation.

Williams, R.T. (1977) The BITCH-100: A culture specific test. In R. Oakland (ed.), Psychological and educational assessment of minority children. New York Brunner/Mazel.

Williams, R.T. (1982). Culture-specific testing, part II. Journal of Non-White Concerns, 10 (2), 50-80.

Table 2

Means and Standard Deviations on TEMAS Indices for Native Puerto Rican Public, Private and Clinical Samples and New York City Puerto Rican Public School and Clinical Samples

Index	PR Public (N = 140)		PR Private (N = 140)		PR Clinical (N = 50)		NY Public (N = 167)		NY Clinical (N = 67)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Inquires	.36	.59	.20	.53	.58	.76	.02	.08	.06	.15
Fluency	85.97	2.75	101.64	36.02	68.35	20.72	111.48	40.59	107.22	33.48
Time	3.63	1.09	3.41	1.05	1.14	.33	3.78	1.04	3.16	1.32
Total Ommissions	1.62	.77	1.60	.59	2.97	.96	.82	.50	1.61	.76
Total Trans.	.17	.18	.11	.01	2.15	.73	.12	.12	.18	.18
Fragmentation	.01	.01	.00	.03	.19	.14	.00	.00	.01	.05
Elaboration	.07	.01	.10	.01	.00	.00	.02	.06	.04	.11
Main Char. Om.	.02	.06	.01	.01	.06	.10	.11	.15	.03	.07
Main Char. Tr.	.02	.04	.02	.03	.01	.05	.03	.05	.04	.05
Sec. Char. Om.	.39	.24	.38	.21	.45	.23	.22	.15	.54	.27
Sec. Char. Tr.	.06	.15	.02	.06	.19	.33	.01	.05	.02	.04
Event Om.	.77	.41	.79	.27	.89	.45	.32	.22	.74	.40
Event Tr.	.09	.09	.07	.08	.11	.08	.05	.06	.09	.10
Setting Om.	.31	.13	.29	.12	.37	.12	.15	.14	.38	.23
Setting Tr.	.02	.05	.01	.03	.08	.13	.04	.05	.03	.04
Conflict	.21	.19	.12	.14	.19	.19	.09	.10	.07	.07
Sequencing	.02	.06	.01	.04	.04	.09	.01	.02	.03	.11

Table 2, (Cont'd.)

Index	PR Public (N = 140)		PR Private (N = 140)		PR Clinical (N = 50)		NY Public (N = 167)		NY Clinical (N = 67)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Imagination	.10	.16	.05	.12	.09	.14	.01	.06	.01	.06
Relationships	.01	.02	.00	.02	.00	.00	.02	.06	.02	.04
Happy	.40	.24	.43	.22	.40	.21	.47	.21	.33	.22
Sad	.28	.19	.28	.15	.39	.18	.38	.22	.29	.20
Angry	.09	.10	.08	.09	.11	.13	.17	.13	.11	.12
Fearful	.08	.10	.10	.11	.07	.07	.07	.10	.09	.09
Neutral	.13	.25	.10	.19	.17	.26	.05	.08	.06	.16
Ambivalent	.01	.04	.01	.03	.02	.05	.01	.02	.01	.04
Congruence	.06	.09	.03	.06	.07	.11	.02	.06	.05	.12
Person Relations	2.52	.22	2.67	.29	2.45	.20	2.87	.21	2.49	.33
Aggression	2.06	.22	2.31	.39	2.14	.25	2.78	.20	2.44	.38
Anxiety	2.27	.29	2.48	.37	2.16	.22	2.90	.18	2.33	.35
Ach. Motiv.	2.80	.29	2.92	.30	2.80	.28	3.03	.25	2.79	.35
Delay of Grat.	2.66	.40	2.76	.44	2.55	.37	2.79	.23	2.62	.52
Self Concept	2.70	.47	2.89	.50	2.63	.46	3.00	.46	2.73	.33
Self/Sex. Ident.	2.80	.42	2.83	.55	2.64	.48	3.40	.51	2.50	.52
Moral Judgment	2.32	.31	2.56	.39	2.29	.30	2.91	.36	2.52	.34
Reality Test.	2.45	.54	2.77	.50	2.47	.37	2.73	.65	2.62	.62

Table 3

Internal Consistency (Alpha) Reliability (r) of TEMAS Indices for Public, Private and Clinical Groups

Index	Public	Private	Clinical
Inquiries	.89	.95	.95
Time	.96	.95	.95
Total Omissions	.87	.76	.80
Total Trans.	.80	.51	.50
Fragmentation	.26	.31	-
Elaboration	.86	.94	-
Main Char. Om.	.76	.69	.85
Main Char. Tr.	.58	.22	.76
Sec. Char. Om.	.69	.56	.72
Sec. Char. Tr.	.88	.79	.90
Event Om.	.87	.71	.86
Event Tr.	.51	.51	.27
Setting Om.	.64	.53	.49
Setting Tr.	.52	.18	.09
Conflict	.86	.82	.87
Sequencing	.81	.80	.87
Imagination	.90	.92	.85
Relationships	.13	.33	-
Happy	.88	.83	.83
Sad	.81	.71	.73
Angry	.65	.68	.77
Fearful	.79	.76	.58
Neutral	.96	.93	.96
Ambivalent	.70	.25	.83

Table 3, cont'd.

Index	Public	Private	Clinical
Congruence	.78	.73	.70
Person Relations	.87	.78	.75
Aggression	.78	.69	.77
Anxiety	.75	.54	.48
Ach. Motiv.	.79	.38	.53
Delay of Grat.	.65	.49	.62
Self Concept	.82	.81	.92
Self/Sex Identity	.61	.45	.49
Moral Judgment	.31	.25	.46
Reality Test.	.58	.36	.95

Table 4

Test-Retest Reliability of Personality Functions for Public (N70) and Private (N=70) Random Subsamples

Personality Function	Public	Private
Person Relations	.34	.34
Aggression	.09	.18
Anxiety	.59	.57
Achievement Motivation	.36	.33
Delay of Gratification	.19	.06
Self Concept	.20	.36
Self/Sex Identity	.29	.29
Moral Judgment	.30	.36
Reality Testing	.53	.48